TENNESSEE FARMER.

"How much more delightful to an undebauched mind is the task of making improvements on the earth than all the vain glory which can be acquired from ravaging it, by the most uninterrupted career of conquests."—WASHINGTON.

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TENNESSEE FARMER.

***Jonesborough, February,* 1839.**

Legislative encouragement to Agriculture.

A great deal of solid thought and sound argument has been given to the American public, within the last year or two, in relation to this subject, by our agricultural papers. It has been presented in all its various and imposing aspects, with a zeal and ability which have certainly merited a more signal triumph than the actual results exhibit. But little, comparatively, has been achieved. Our National and State Governments, and the great body of the people, still slumber on, as though mutually content to let the agricultural interest take care of itself—thoroughly convinced, apparently, that no other course is demanded at the hands of either party.

It is greatly to be regretted that the light shed upon this subject, has not been brought to bear more directly upon those who most need the impulses of such an influence. To those who are in the habit of reading the agricultural publications of the day, the labored argument to demonstrate the obligations of Government to aid and cherish the farming interest, is, in a great measure, a work of super-erogation. They are, generally, already convinced on this point; and need only be occasionally reminded of their obligations to *act* on this great question, by influence and example, wherever action may be proper and practicable.

But the politicians—whose august hands hold the immediate power over this vastly important question—how many of them ever read or hear of these strong appeals to their patriotism and sense of duty. Engrossed with the honors and emoluments of office, deeply devoted to the sublime details of party management, it is to be feared that the agricultural publications of the day have but a very limited circulation in our Legislative Halls.

On the other hand, what an immense mass, if not of uninformed, at least, of lethargic mind, throughout the farming population of the whole country, yet remains to be acted on, aroused and directed to this momentous subject! How little hope is there that any thing will be done in this matter, until this dormant mass shall be made to move and tell upon our politicians—demanding and securing that rational legislation on this subject which comports with the genius of our civil institutions, and the spirit of the age in which we live.

What we need, therefore, is a wider diffusion of the light which has already been elicited on this question—a more general understanding between Government and people, of the rights of the one and the duties of the other. It would seem, indeed, as though the statesman, selected to serve the people because of his superior wisdom, must be apprized of the urgent claims of the agricultural interest upon his notice and advocacy. These claims are so obvious, that they cannot escape his attention. There is, actually, no apology whatever for his refusal to legislate on this subject. The failure of his agricultural constituency to instruct him in the matter, constitutes no justification of his neglect. He legislates on

many most important subjects without instructions. Trusting to his superior sagacity, the people (three-fourths of them farmers) commit their business, in a great measure, to his discretion; and he repays this generous confidence with the coolest contempt of their most prominent and vital interests.

This entire subversion of the ends and objects of all good Government should no longer be submitted to by our farming population. "Birds that know how to sing, and that will not sing, should be made to sing." Our public servants must be "instructed" on this subject; and if they still refuse to act—the remedy is obvious.—But here lies the great difficulty. What means can be employed to bring the great mass of our farmers to a consciousness of their strong obligations to exercise their constitutional power in securing a just and equal share in the Legislative favors of the State? It is a momentous question. It comprises the gist of the whole matter. And there would seem to be a few plain, prompt remedies, which might not be unavailing in this emergency.

If we are right in supposing that the reading portion of our agricultural population are already convinced on this question, our first appeal would be to them. Their position demands that they take the lead in this matter. Let them unite in bringing out candidates for office, in the several sections of the State, entertaining, on this subject, opinions common with themselves, and competent to their advocacy before the people and in our halls of legislation. With our methods of canvassing for offices within the gift of the people, there is no calculating the effects of such an effort judiciously carried out. There is nothing abstruse or mysterious in this question, which our shrewd yeomanry will not immediately comprehend; nor would be rational to doubt that they need only a clear statement and elucidation of their rights to appreciate and assert them. If there is nothing improper or impracticable, (as there certainly is not) in this project, why not adopt it at once?

We have no doubt that our Agricultural Societies might also do much towards attracting public attention to this subject. They could express their opinions, at their stated meetings, by resolutions and circulars, and publish them to the world. They could do more. They could, as a body, most appropriately, address memorials to the Legislature, and also draw up, and pledge themselves to circulate petitions, for signature, among the people, praying for legislation on this subject. Need we add that they *ought* to do this, or that there can be no doubt of the salutary effects of such measures?

Conventions, emanating from the agricultural communities of the State, might also do a great deal, by similar means. We presume that some action of this kind will be had by the Agricultural Convention, which meets at Lebanon on the first Monday in May next. We do hope its sittings will not terminate without a strong and direct appeal to our Legislative authorities in behalf of the agricultural interests of this State. Will ever a more fit occasion present itself for an effort of this character.

Other measures might be suggested as appropriate and advisable. The means are in our hands, if we will but employ them with judgment and energy. We need but to diffuse the light already abroad in the land, so that it shall penetrate the log cabins of every agricultural settlement in the State, and our work is done. Let no one doubt the direct connexion of cause and effect in this matter. The plant which is shut up from the light of the natural sun, is sickly, colorless, and without fruit. But tear away its prison-house, and give it the glance of the genial day-beam, it shoots up in its vigor, its verdure and its blossoms gladden the eye, and, in due time, its branches hang with fruit,

"purple and gushing,
Reeling to earth in bacchanalian profusion."

He is but little conversant with the history of the human mind, who does not know that the light of the intellectual sun produces results equally surprising in the moral world, and infinitely more precious and enduring.

Buying a Farm.

Many valuable hints may be derived from the ancients, in relation to various matters connected with the agricultural life. In not a few of their maxims and practices, as handed down to us by

their many writers on this subject, the lights of modern improvement will fail to detect any thing to reform or modify. What moral oracle, for instance, could, in so few words, give better advice in relation to the purchase of a farm, than will be found in the following passage from the illustrious Cato:

"Buy not too hastily," says he, "but view again and again the purchase you intend to make; for if it be a good one, the oftener you see it the better it will please you. Examine how the neighboring inhabitants fare; let the country it lies in be a good one, the ways to and from it good, and the air temperate; let your land, if you can choose your situation, be at the foot of a hill, facing the South, in a healthy place, where a sufficiency of laborers, of cattle, and of water, may be had; let it be near a flourishing town, the sea, or a navigable river, or bordering upon a good and well-frequented road; let the buildings upon your ground be strong and substantial; do not rashly condemn the methods of others."

Making walks in the Garden.

We have seen many gardens, well stocked with vegetables and blooming with flowers, which might have been greatly improved in appearance by adopting a somewhat more tasteful method of making the walks. These are frequently, with great labor, dug half a foot or more deep, and made level upon the surface—the soil being thrown upon the adjacent beds or borders. An incomparably neater method is to make the walk three or four inches deep at the sides, gently rounded, and highest in the middle. This looks better, is not so much affected by wet weather, and is much more easily kept in order. The level walk is objectionable on many accounts. It requires ten times more labor to make it than the other. It has an awkward appearance when it *is* made, especially if deep. If not gravelled, it becomes and remains muddy after a shower; and if the garden is not on perfectly level ground, it soon washes into ruts, and then is hard to repair.

The walks in the garden are, generally, a great enhancement of, or a foul blot upon its beauty. Made convex, as we have recommended, and covered with gravel, (where it is convenient or practicable) they constitute one of the pleasantest features in that pleasant picture—the neatly arranged garden.

Doing up the sides of Beds and Borders, as intimately connected with the neatness of the walks, may also deserve a passing notice. This *may* be well and handsomely done with the spade and line alone; but if the sides have no other support, it will be necessary to repeat this tedious job every Spring—to avoid which, various means are resorted to. It is said that limestone curbing, where it is light and uniform has an exceedinly neat appearance; and hard bricks laid on their edges, we know answer admirably. But a cheaper, though less durable material, may be had in cedar, locust, or even good white-oak plank or lathes, an inch thick, and about four inches broad. These properly put down, neatly joined at the corners, and nailed to stakes driven *inside* the beds, and a little below their surface, so as not to be seen, will not only look well, but last a number of years, and are easily repaired when they do fail. Plank of the above dimensions, and managed as directed, will be found to be a very different affair from the broad, rough boards which are sometimes seen in our gardens, propping up a high bed or border, at the side of a deep walk, themselves propped up by stakes driven *outside* the beds, the whole of materials and workmanship which are destined to speedy dilapidation.

The pleasures of country life.

One of the most exhilirating circumstances in the Agricultural life, is the never-ending succession of change and variety in the scenery and labors of the farm. This pleasing diversity makes itself felt throughout the lapse of the seasons.—There is some little monotony, it is true, in the bronze countenance and icy breath of surly old Winter; but even he, hard-featured and cold-hearted old gentleman as he is, has his freaks of fancy to beguile the usual dullness of his presence; treats us to an occasional glance of most blessed sunshine; and now and then throws off his rusty brown coat, and puts on his robe of state so exquisitely white and cleanly, as no ermined judge or ball-room beauty may ever aspire to rival.—And then his storms and tornadoes! where is the theatrical mechanism which can ever compete with him at these? His torrents of rain and sleet too! The magnanimous Mr. Epsy may brag as he

pleases about raising tne Ohio at pleasure with his manufactured article, we believe he will never be able to come up to the every-day doings of old Winter in this line of business.

Winter, too, witnesses many cheering changes in the arrangements of the farm. Under the magic of the woodsman's axe, the tangled forest suddenly becomes the open field, and takes its place as an integral part of the regular plantation. The stately fence rises up erect, in its long lines, with its comfortable appearances of strength and security; and a re-arrangement of fields and enclosures often strikes the eye with a sentiment of gratification.

But, sad as is the havoc he makes in the vegetable world while he does stay, even stormy old Winter passes, swiftly, on his way; and, with his departing footsteps, that famous young artist, Spring, comes forward to touch the whole scene with her tints of green, and to remodel all that rough old Winter has destroyed.

Spring brings her balmy skies and fragrant breath to all; but none so sensibly as the farmer feels the exhiliration of the season, the release from his Winter's inactivity, and the excitement of his rural labors; none looks forward to the prospect before him, and to its succession of changes, with more joylous expectation. The fresh soil is now upturned in every direction, a change of scene which some may regard as not very decidedly picturesque. But as a preparation for his crops, it is inexpressibly pleasing to the farmer. And if the *black mould* is, indeed, unsightly to the eye of refinement, one might suppose that the most fastidious could not fail to be pleased with the various *fancy colors* which are brought to light on some of our farms by this handy work of the plough. The most brilliant dies are often exhibited, red, yellow, orange, &c. &o. This might please even the Indian taste which delights in lively colors; but we appeal to the farmer if he had not better go to work with the soil which shows these gaudy hues, and bring it, with all possible speed, to the color and qualities which accord with the standard of *true agricultural taste.*

Very soon, however, this aspect of the fields is succeeded by another far more vivid and pleasing. Nature's own favorite color, green, sheds its soft mantle upon the whole scene. The small grains, in disordered array, but beautiful in their disorder, thrust up their bright spires in such profusion that the soil is no longer visible; while the stately corn, marshalled in ranks like regular troops on review day, stands erect as a grenadier, and rustles its flags in the breeze with great dignity.

But another glorious change comes with the coming of harvest. The small grains have shed their verdure, and they now ripple in the wind like a sea of molten gold. Before the touch of the reapers that majestic grain is cut down in a day; and the field from which, in the morning, the footsteps of man and beast were carefully excluded, is now open and accessible at all points. Your ground is your own again; whilst the thick array of shocks upon it assures you that it has made a good return for your temporary banishment from its precincts.

A similar feeling attends the mowing of the luxuriant meadow, and the change of its crowded surface to the smoothly swept carpeting of its embryo aftermath.

Those also who practice cutting the corn crop at the ground early in Autumn, find the sudden change of scene indescribably pleasant and exhilerating.

The preparation and casting of the Fall sown crops renews this routine of variety; and so on throughout every recurrence of the seasons. A benevolent Providence has liberally provided for the indulgence of our innate fondness for novelty by vividly stamping that characteristic upon all the successive vicissitudes of the circling year.

The manual occupations of husbandry are cheered with a change and variety correspondent with the varying aspects of the farm. This alternation is so rapid and diversified as forever to exclude the weariness of monotony at least, and greatly to relieve the husbandman in the fatigues of his farm labours; no slight amelioration, this, of the primeval doom of man that he should "eat his bread in the sweat of his face."

The rigid utilitarian will doubtless regard the above reflections as altogether superfluous and unprofitable. But we do not succumb to any such criticism. We believe it to be a point of no inconsiderable importance that the farmer should take a high and exalted pleasure in his

employment. We wish to see him love the agricultural life because of its own intrinsic charms. To him who delves the earth wholly and solely for the present pelf he may be able to extract from it, farming is a sordid and a dirty business. It is indeed an ungrateful and a ruinous business with our common mother, who is almost certain to be reduced to extreme poverty by the unnatural practices of such a son. From him only can improvement be expected who takes a pride in his pursuit, who is fascinated with its pure and wholesome pleasures, and the rewards of whose labors is not made exclusively to consist in prompt returns of dollars and cents. We would not indeed have the farmer so sublimated in his ethics as to be altogether uninfluenced by this latter consideration. His profits as constituting the means of improvement on his farm, and of promoting the welfare of those who surround him may be made largely instrumental in subserving the highest purposes of human life. And there is one fact, in connexion with this subject, which we would especially commend to those who are in such a hurry to be rich that they cannot take time to calculate the consequences of a ruinous system of agriculture. The farmer who takes a proper pride in his calling and conducts its details with an eye to permanent improvement as well as present profit, will always, other things being equal, become a richer and more prosperous man in the end, than the greedy cultivator who runs down his soil with an uninterrupted series of exhausting crops in his extreme haste to make it immediately profitable.

Economy in Clearing Coffee.

This, which is, ordinarily, a small affair, grows into a matter of some magnitude with those who love a clear cup of coffee when eggs can scarcely be had even for this purpose (as is sometimes the case with those who live in towns and villages) and when other clarifiying agents are not at hand. We would therefore inform such as are not already apprized of the fact, that a single egg may be made to clear a pound or more of coffee, by stirring it with the coffee after it is parched, and before it has entirely cooled. This method also saves trouble, as the operation will not have to be repeated until the pound is exhausted.

Loin Distemper in Hogs.

It will be recollected that our correspondent, Parvus Agricola, in the September number of our last volume, recommended Arsenic as a remedy for this disease in swine. We find the efficacy of this prescription corroborated by the following from the Genessee Farmer.

Cure for the Kidney Worm.—*Mr. Tucker.* I herewith enclose you a recipe which has in no instance failed to cure hogs of a disease very generally fatal, the Kidney worm. I have had them so bad that they would drag their loins for a week, and with all the experiments I could try they would die. Three applications of from a half to a teaspoonful of rats-bane given in an apple or potatoe for three days has always effected a cure. The rats-bane should be good, and I say, with confidence, there is no injury to be sustained from its use to swine. L. T.

THE HARMAN THRESHING MACHINE.

According to promise in our last Number, we attempt a description of this machine—though we are, by no means sure that it will be satisfactory:

The frame (which shou!d be of strong material and firmly put together) is about 3½ feet high, 44 inches long, and 2 feet or more broad—the *legs* being wider at bottom than at top. The eight *beaters* are not quite three feet long, made of strong wood 2 inches square, armed, on one side, with rolled sheet iron an eighth of an inch thick, and let into three circular blocks of wood, 13 inches in diameter, about an inch at one angle, and firmly attached to the blocks by iron clamps nailed to their sides. A solid bar of iron 1¼ inch square goes through the centres of the circular blocks, the ends of which extend out so as to act as gudgeons upon which the beaters revolve, and to one of which the whirl for the band is attached. Within the frame corresponding to the circumference of the beaters, and more than a third of that circumference, there is a concave ribbed surface plated with iron and set on a wooden spring.—The grain is brought between the beaters and this concave surface by the apron and two rollers which revolve by pullies worked by bands from the main whirl at one end, and a smaller whirl at the other end of the iron bar. A cap or cover of light plank completes the machine, which when propelled by an adequate power, performs its work effectually and with great rapidity.

We recommend the following to those persons who think they have no opportunity of mental improvement. We have frequently been shocked to hear the remark "I have no time to read." Far more rational would it be to say "I have no time to eat."

From Gov. Everett's Address before the Bristol School Convention.

PERSONAL EFFORTS REWARDED.

It is a great mistake to suppose that it is necessary to be a professional man, in order to have leisure to indulge a taste for reading. Far otherwise. I believe the mechanic, the engineer the husbandman, the trader have quite as much leisure as the average of men in the learned professions. I know some men busily engaged in these different calling of active life, whose minds are well stored with various useful knowledge acquired from books. There would be more such men, if education in our common schools were, as it well might be, of a higher order, and if common school libraries, well furnished were introduced in every district, as I trust in due time they will be. It is surprising, sir, how much may be effected, even under the most unfavorable circumstances, for the improvement of the mind, by a person resolutely bent on the acquisition of knowledge. A letter has lately been put into my hands, bearing date the 6th of September, so interesting in itself, and so strongly illustrative of this point, that I will read a portion of it; though it was written, I am sure, without the least view of publicity.

"I was the youngest, (says the writer,) of many brethren, and my parents were poor. My means of education were limited to the advantages of a district school, and those again were circumscribed by my father's death, which deprived me at the age of fifteen of those scanty opportunities, which I had previously enjoyed. A few months after his decease I apprenticed myself to a blacksmith in my native village. Thither I carried on an indomitable taste for reading, which I had previously acquired through the medium of the society library; all the historical works of which I had at that time perused. At the expiration of a little more than half my apprenticeship, I suddenly conceived the idea of studying Latin. Through the assistance of an elder brother, who had himself obtained a collegiate education by his own exertions, I completed my Virgil during the evenings of one winter. After some time devoted to Cicero and a few other Latin authors, I commenced the Greek. At this time it was necessary that I should devote every hour of daylight and a part of the evening to the duties of my apprenticeship. Still I carried my greek grammar in my hat, and often found a moment, when I was heating some large iron, when I could place my book open before me against the chimney of my forge, and go through with *tupto, tupteis, tuptei*, unperceived by my fellow apprentices, and to my confusion of face, a detrimental effect to the charge of my fire. At evening I sat down unasisted and alone to the Iliad of Homer, twenty books of which measured my progress in the language during the evenings of another winter. I next turned to the modern languages, and was much gratified to learn that my knowledge of Latin furnished me with a key to the literature of most of the languages of Europe. This circumstance gave a new impulse to the desire of acquainting myself with the philosophy, derivation and affinity of the different European tongues. I could not be reconciled to limit myself in these investigations to a few hours after the arduous labors of the day. I therefore laid down my hammer and went to New Haven, where I recited to native teachers in French, Spanish, German and Italian. I returned at the expiration of two years to the forge, bringing with me such books in those languages as I could procure. When I had read these books through, I commenced the Hebrew with an awakened desire of examining another field; and by my assiduous application I was enabled in a few weeks to read this language with such facility that I allotted it to myself as a task, to read two chapters in the Hebrew Bible, before breakfast each morning; this and an hour at noon being all the time that I could devote to myself during the day. After becoming somewhat familiar with this language, I looked around me for the means of initiating myself into the fields of Oriental literature, and to my deep regret and concern I found my progress in this direction hedged up by the want of requisite books. I immediately began to devise means of obviating this obstacle; and after many plans I concluded to seek a place as a sailor on board some ship bound to Europe, thinking in this way to have opportunities of collecting at different ports such works in the modern and oriental languages as I found necessary for this object. I left the forge and my native place to carry this plan into execution. I travelled on foot to Boston, a distance of more than a hundred miles to find some vessel bound to Europe. In this I was disappointed, and while revolving in my mind what step next to take, accidentally I heard of the American Antiquarian Society at Worcester. I immediately bent my steps towards this place. I visited the Hall of the A. A. S. and found three, to my infinite gratification, such a collection of ancient, modern and oriental language as I never conceived to be collected in one place; and, Sir, you may imagine with what sentiments of gratitude I was affected, when upon evincing a desire to examine some of these rich and rare works, I was kindly invited to an unlimited participation in all the benefits of this noble institution. Availing myself of the kindness of the directors, I spent about three hours daily at the hall, which with an hour at noon and about two in the evening, make up the portion of the day, which I appropriate to my studies, the rest being occupied in arduous manual labor.

Through the facilities afforded by this institution, I have been able to add so much to my previous acquaintance with the ancient, modern and oriental languages, as to be able to read upwards of FIFTY of them with more or less facility."

The Cincinnati Mirror says that a man who was hung lately in a neighboring State for burglary and murder, confessed under the gallows that his career of crime began by *stopping a newspaper without paying for it.*

THE SMITHSONIAN BEQUEST

Washington Dec. 17th 1838.

The best method of executing the benevolent design of Smithson, who bequeathed half a million of dollars to the United States to be expended in the diffusion of knowledge, begins to excite a good deal of interest, and has claimed the attention of several intelligent and scientific men in our country.

The communications received by the Secretary of State in answer to interrogatories sent by that officer to a number of scientific men in the United States, have been referred to a select committee, of which J. Q. Adams is the chairman, and who, I presume, will bestow upon it much of his attention. A friend has communicated to me the outline of a plan recommended by a German, which I mentioned in my last; but whether it will be adopted or not I am not prepared to say. It was presented to-day by Mr. Adams.

This plan contemplates the establishment of an institution in this city to serve as a nursery of scientific agriculturists of the United States—to consist of one hundred pupils at a time, to be gradually increased from the profits of the farm; the lectures to be free. and the price of board moderate as half the number of pupils are to be practically employed daily on the farm. In the first or principal compartment of this Institute will be taught, 1st. *Agronomy*, which treats of the different primitive earths, and other elements of which the soil is composed. 2d, *Agriculture*, which teaches the cultivation of the respective soils in such a manner as to produce the most perfect crops. This is subdivided into chemical and mechanical agriculture. 3d, *Vegetable productions*, teaching the culture of grasses, leguminous field plants, roots, vines, mulberry trees, fruit trees, &c. 4th, *The Animals* used and raised by the agriculturists, &c. 5th, *Economy* or the manner of arranging and conducting a farm. In the secondary compartment the following branches are to be taught viz: Veterinary, Technological agriculture, culture of forest trees, agricultural architecture, and civil engineering as connected with agriculture. The auxiliary sciences to be taught, are Chemistry, Natural Philosophy, Mineralogy, and Geology, Botany and Physiology, Zoology and Meteorology; the Methematical Sciences, drawing of machines, animals, plants and landscapes. For the purpose of illustrating all these sciences, there must be an extensive farm, with a field for experiments, workshops, beet sugar manufactory, mills &c.—a botanical garden, a collection of the best implements, or models of them; a library; a cabinet of minerals properly arranged according to their chemical character; and apparatus for mathematical and physical instruction; a collection of skeletons of domestic animals for the study of comparative anatomy; a collection of seeds and insects, and a laboratory. The farm which is to serve for the practical illustration of the theory is to consist of 640 acres in cultivation, to be divided into equal portions. to show the system of rotations. One hundred acres of meadow, to show how natural meadows can be improved by draining, irrigation, manuring, &c. Eighty acres of pasturage, to show the difference between natural and artificial pasture, and the manner of improving it—four acres or a vineyard—four acres for a hop yard—forty acres for experimental fields, to show how to cultivate plants useful in agriculture, to try new ones, and for experiments on manures, rotation of crops, and new agricultural implements—a vegetable garden of six acres—a mulberry plantation of six acres—an orchard and nursery of twenty acres—five hundred acres of woodland, to show the cultivation of forest trees, the mode of preparing charcoal, &c., and a botanical garden of three acres.

The pupils admitted into this establishment are to be taught to forge, to shoe a horse, to make a wheel and wagon, to stock a plough, to build outhouses, &c. The number of pupils at the commencement is not to exceed 100—to be at least 14 years of age at the time of admission—of good moral habits—to possess an ordinary English education, and be capable of comprehending a popular course of lectures. They are to be divided into three classes. The third or free class is not to exceed 20 in number—must stay two years—perform the work of the farm, and receive their tuition, boarding and lodging free. The second class is not to exceed 50—must also stay two years, to acquire the theory and practice of agriculture, and all the auxilary sciences. The first class is to consist of 20 pupils, who have been two years in the third class, and who desire to perfect themselves for professors of similar establishments. This class is to have the superintendence of the other pupils. The officers of the institute are a director, who has the entire direction and control of the establishment; a treasurer and two clerks, five professors, and a teacher of the lower branches. The practical manipulations are to be illustrated by a superintendent of the farm, a superintendent of the stable, who teaches riding and breaking horses, a superintendent of the sugar beet manufactory, a machinist, gardener, shepherd, &c.

The total cost and expense of purchasing the lands, erecting the buildings, buying stock, &c. are estimated at $150,000, and $140,000 are to be invested at 6 per cent. and out of the proceeds the salaries of the professors and officers are to be paid. If this should be adopted, it would be the only institution of the kind in the United States, and the first attempt ever made by Congress to promote the most valuable and important branch of our national industry and wealth. The other plans consist, I believe, of the old fashioned universities, &c, and systems of free lecture.—*N. Y. Herald.*

TO PRESERVE EGGS.—Eggs have often been preserved sound and good for months by putting them up with common wood ashes, in a box or cask, so as to exclude the air. It is said they do best when placed on end.

Regimen for a wind broken horse.—Lime water freely given has, in many instances, cured this disease We know an instance where a wind broken horse had been kept in a field where there was not any water except in the bottom of an old limekiln, and had perfectly recovered his wind.—*Practical Farmer.*

It is generally attached to horse power in this section of country; but is equally well adapted to water power.

Now that we have *attempted* a description of this machine at the request of our correspondent (P. A.) will he in return favor us with some more particular account of his Straw-Cutter, of which he seems to entertain so favorable an opinion?

From the Farmer's Register.

TREATISE ON THE CULTURE OF SILK.

BY GIDEON B. SMITH—NO. II.

The laboratory, fixtures, silk-worms, &c.

The laboratory, or building in which silk-worms are to be raised, must be of a size proportioned to the number of worms intended to be kept. As to its form and structure, no precise rules can be given, nor, indeed, are any such necessary. Probably no two persons in Europe have laboratories precisely alike; and this fact goes to prove that no particular construction is necessary. All that is required, is, that the room should be of a sufficient size to accomodate the number of worms intended to be kept; that it should be provided with fire-places or stoves, for raising the temperature when necessary, and drying the air, and with ventilators in the ceiling, and windows on all sides, for the purpose of ventilation and light. I would, however, recommend wooden, instead of brick or stone buildings, as they are more easily managed as to temperature, than the latter, and in damp weather, do not condense and collect water from the atmosphere so much. In a large room, three or four small stoves at the extreme ends and sides are very useful in severe cold times, and also in very damp weather. Ventilators may be very useful made at each side of the room (if the house be a frame,) by leaving a space one or two feet deep, and the whole length of the room, and reaching to the floor occupied by long shutters, hung by hinges on the upper sides. In ordinary warm dry weather, these shutters may be raised, more or less, as desired, and thus the room kept well supplied with fresh air. During cold or damp weather, the shutters will, of course, be kept closed. A large room ought to have several vents for the escape of foul air, in the ceiling. These may be nothing more than ordinary trap-doors, two feet wide and three feet long, with shutters to close them at pleasure. When these are opened, and the ventilators at the sides also open, a free current of air will be kept up through the hurdles, and thus the laboratory will be kept free from impure air. They will be found particularly useful after a time of rainy or damp weather, during which it has been necessary to keep the room shut up. I have found *fire* particularly useful in these damp times, (though the temperature was sufficiently high of itself,) in purifying the atmosphere in the room. I generally make a brisk blaze with light-wood or shavings in the fire-places or stoves. It has an admirable effect, not only in expelling foul air, but in enlivening the worms—probably in drying the damp air. I have found much more use for fire, during such times, than I ever have on account of cold weather. Indeed, we seldom have weather cold enough to do harm at the season of feeding silk-worms; though we do sometimes, however, it is of short duration. Permit me to make one remark here, on the effect of temperature on silk-worms. I would not be understood as saying or believing, that the temperature could be neither too high nor too low for a profitable result; but I do say, that silk-worms are not affected more than other insects, by its variations. Indeed, I am pretty well convinced, that ordinary variations of temperature are as beneficial to the constitutions of silk-worms, as they are known to be to other animals. *Extremes* only do harm. Do we not find that a continued sameness of temperature, especially if warm, is debilitating to our own systems, and to those of all other animals? Look at the people of the tropics. The temperature there is seldom higher than with us in summer, but it is more equitable—always nearly the same. I need not allude to the effect of it on the constitutions of the people: their imbecile languid, lazy, spiritless characters, are proverbial. As we go north, where the variations of temperature are the greatest, we find the constitutions of men and animals the most robust. Indeed, variations of temperature, and the agitation of the atmosphere in the form of heavy winds, appear to be beneficently provided by the Creator, for the well-being of all his creatures. Why, then, are silk-worms supposed to be exceptions to this rule? I cannot believe that they are; and my experience supports me in the belief of their being, like all other animals, only injured by extremes.

A pretty good calculation may be made as to the size of the room required, from the fact, that a room eighty feet long and forty wide will accommodate one million of worms. Instead of one room of that size, four of forty by twenty, I think, would be preferable, as being more conveniently managed, and being better adapted to a proper *division* of the worms, which may then be separated, each day's hatching being placed in a distinct room. The temperature of the rooms can also be more easily regulated, though possibly at something greater expense of fuel.

In large establishments, a hatching-room will be useful. This need not be large—say twelve by fifteen feet. It should be made close, with a couple of windows, capable of being perfectly closed by shutters at pleasure. A good stove should be provided, capable of raising the temperature to summer-heat, when required. This room may be conveniently used, also, for killing the chrysalis in the cocoons, as will be hereafter shown.

Another room will be necessary for the accommodation of leaves, a good supply of which for a day or two a-head, should always be provided, that no lack of a supply may occur during rainy weather. A loft over the laboratory, or a room in the basement, may be very conveniently used for the purpose. In a basement, leaves will keep fresh for three days, but they should not be left in compact masses, as they are apt to *heat*, from spontaneous fermentation. It is proper that they should be occasionally stirred and shaken about to prevent such an event.

The fixtures of the laboratory, are convenient hurdles or shelves, for the accommodation of the worms

while feeding, and spinning their cocoons. The best form and construction, are those first adopted by me, and which I believe are now in general use. They are two and a half to three feet wide, and four to five feet long. The size may, of course, be varied at pleasure, without detriment or inconvenience. The size mentioned will accommodate about 500 worms, when ready to spin cocoons. They are made like the outside frame of a window-sash, with a floor of netting. The netting is now woven in the north for the purpose and only requires to be tacked to the frame, well stretched. Formerly it was necessary to make the netting ourselves, which was done by perforating the sides and ends of the frame with a broad awl five-eighths of an inch apart, and inserting good skein twine first, length-wise, until it was filled, then cross-wise, weaving it by passing it over and under the other twine alternately, and drawing it quite tight. The twine will be about five-eighths of an inch apart each way. It is of some importance, that the twine should be *tanned*, by immersion in a tanner's vat, for a few hours, dried, and then thoroughly washed, to remove any remains of the tan that may be on it. This ought also to be done with the prepared netting, if that be obtained. The utility of the tanning is obvious: it prevents rotting, to which the twine is liable, from the dampness of the filth. The netting should also be put on the frames in dry weather, because the twine is then at its greatest expansion; and if put on in that state, is not so liable to stretch and *lag*, when loaded with worms and food. Another frame of the same size, is to be covered with *paper* or muslin, to be placed immediately under the net frames, in the *stands*.—These latter are used for the purpose of catching the ordure and filth that falls through the netting of the hurdles. They may be placed two or three inches below the hurdles.

The STANDS, for the support of the hurdles, are simply upright posts, made of three or four inch joist, firmly fixed to the floor below, and to the ceiling above, two feet apart one way, and just far enough the other to permit the free passage of the hurdles sideways between them. Pieces of wood are to be nailed to each two posts to support the hurdles, at about twelve inches apart. I had mine only nine inches apart; but I think they are better at twelve inches. Another piece is to be put upon the posts two or three inches below the others, to support the paper shelves. On this plan, it will be perceived, that the hurdles have the appearance of a set of shelves. The whole room is to be thus occupied with the hurdles, leaving alleys between each range for the free passage of the attendants.

The fixtures in the hatching-room, are simply one or more ordinary tables, sufficient to accommodate the eggs to be hatched, a thermometer, and a good stove.

HATCHING.—About the first of May, the eggs, which have, of course, been kept in the cellar since the time they were laid last season, are to be put in the hatching-room; the papers on which they are, are to be spread out on the tables. If the temperature be not as high as 70°, it must be raised to that point before the eggs are taken to the room; if it be higher, *naturally* it is of no consequence. Every day the temperature, should be increased one or two degrees until the eggs are hatched; unless, as just observed, the temperature be above 70° naturally, in which case all that will be necessary is to prevent a depression at night, and changes of the weather. It will not be necessary, at any time, to raise the heat higher than 80°. Generally, in about five days the worms will begin to hatch. The first day, but few will come out, and these need not be regarded, but on the second day, considerable numbers will hatch, and they should be taken and placed on the hurdles, and the hurdles containing each days's hatching should be marked with the date of the hatching. Where there are four laboratories, as recommended in a previous page, each day's hatchings should be conveyed to separate rooms. On the third, fourth and fifth days of the hatching, the same routine must be observed. On the latter day, all the eggs will be found to have hatched, except a few scattering ones, which, like those of the first day, need not be regarded, as they will be too few in number to be worth any trouble; and if mixed with the others, will only cause confusion by their irregularity in moulting, &c.

For removing the young worms from the hatching-tables to the hurdles, I have found the best method to be, to lay whole mulberry leaves on the table, covering the eggs and worms completely. The young worms will soon collect upon the leaves, when they are readily conveyed to a small portable hurdle, by taking hold of the stem of the leaf, borne to the laboratory and laid upon the hurdles. Many thousands may be accomodated on each hurdle for the first week, and as the worms grow, and become crowded, they must be distributed to other hurdles. All these minute affairs will suggest themselves to the intelligent operator, as they become necessary. The morning is the time for removing them, as they generally hatch from day-light to 7 or 8 o'clock.

As soon as the young worms are placed upon the hurdles, a supply of food must be given them. The leaves may be torn into small pieces, and scattered over the surface of the hurdle, covering the young worms with them. They will speedily commence eating. The leaves on which they were borne from the hatching-room will, however, be sufficient for several hours. The worms are now to be regularly fed three times a day, with fresh leaves, torn into small pieces, the size of a dollar, or thereabouts, for the first week; after which, they are as well laid on whole. Care should be observed, not to lay on more leaves than will be consumed, as considerable waste would thus occur; and, also, not to allow the worms to remain one moment without food; it were far better economy, indeed, to waste leaves by giving too much, than to stint, the worms, at any stage of their existence. For the first two weeks, no other care is necessary than attention to their being properly fed three times a day, as above remarked; keeping the room at a moderate temperature, by artificial heat, when cold and by ventilation, when hot and sultry. The French divide the time of the worms' existence into periods, which are distinguished by their moulting, or shedding their skin. These periods are called

ages, and very particular directions are given for observance at each of these periods or ages. I, however, have never found any particular necessity for much variation in treatment. Cleanliness, moderate temperature, and a full supply of food, at all times, are all I ever found either necessary or useful at any time. The periods of moulting are generally about the seventh, thirteenth, nineteenth and twenty-fourth days from the hatching; but these periods are materially influenced by the care and attention bestowed and the state of the weather. Some worms will be ready to spin on the 25th day, while others will delay their spinning even to 40 and 50 days, according as they are well or illy attended to. And here let me advise the young beginner that *care is money;* for there is no kind of human employment in which care is so well rewarded as in the management of silk worms. The worms that by want of attention, are made to spin out their time of feeding to 40 or 50 days will have consumed double as much food as those that begin to spin their cocoons on the 25th to the 28th day; will have occupied double the time of the attendants; and, after all, will not produce much, if any, over half as much silk, and that of an inferior quality, as they would have done, if well attended to, and thus made to spin at the proper time. This fact, which I have abundantly proved in my own practice, should never be lost sight of.

The French also direct certain quantities of leaves to be given each day, during each age of the worms. This I never found of any service whatever. Worms will eat double as much one day as another, owing, probably to the dampness or dryness of the air, or to various other causes; but whatever the causes be, the *ten* or *twenty pounds* of leaves directed to be given them may be entirely too much or far too scanty an allowance. My plan is to keep fresh food on the hurdles at all times, and this I believe to be the only economical rule. I have often weighed the leaves according to Count Dandolo's scale, but never found the quantities he recommends to agree with the demands of the worms—they sometimes requiring more, and sometimes less. I imagine, that the idea of weighing the leaves for each day's consumption, in France, originated in the fact that the leaves are grown by one person and the worms raised by another in that country; the person who raises the worms purchases the leaves by weight, and this making it necessary that the consumer should form some estimate of the probable quantity he would want each day. It could not have originated in practice; for, as before remarked, the consumption of leaves is not regular at any particular time.

The French also direct the leaves to be cut fine, and have knives for the purpose. The Chinese also do the same. For several seasons, I followed these directions and cut the leaves with a sharp knife, but was ultimately led to doubt the utility of it, and to abandon it. On close examination, I found that the worms did not like the cut edges of the pieces of leaves, and have often seen them turn from them in apparent disgust. I at first supposed my knife was not sharp enough, and that hence the edges of the leaves were somewhat bruised in cutting; but it was the same with the sharpest knife I could use. Besides this, I found that the worms would get upon and press down the finely cut leaves, and thus cause considerable waste; and, further, that the leaves thus cut, would wither and become useless much sooner than whole leaves. On trying even the youngest worms with whole leaves, I found they would eat them just as easily as when they were cut. Even the old, full-grown leaves were as readily devoured by young worms, as young and tender leaves would be. From these facts, I concluded that even if cutting the leaves were never so unobjectionable, it yet was a useless trouble, and I abandoned it altogether. Indeed, when I fed with white mulberry leaves, I even went so far as to gather the leaves by cutting off small branches and laying these on the hurdles with all the leaves on them; and this is by far the best plan, as the leaves keep fresh much longer—indeed, until they are entirely consumed, and allow the worms a much better and more natural position while feeding; as they get upon the branches, in all directions, they are not crowded upon a flat surface, but are supported by the branches. *They* prefer this plan to all others.

CLEARING THE HURDLES must be attended to, not at regular periods, but as often as the accumulation of filth or offal renders it necessary. The use of the net hurdles renders this not so often requisite, but still it must not be neglected, especially in damp weather; for it must be borne in mind that nearly all the diseases of silk worms proceed from foul hurdles. To clean the hurdles, all that is necessary is to lay over the worms some large fresh leaves in the morning, and as soon as the worms attach themselves to them, which they will immediately do, take the leaves by the stem, and lay them on a clean hurdle. In a few minutes a hurdle may thus be cleared of the worms, when the filth and offal may be thrown away, and the hurdle used for the reception of the worms from another; proceed in this way until all are cleared. It is a good plan to carry the filth to a distance from the laboratory; as, if deposited, as is too often done, *under the back window*, it may do just as much harm as it would if left on the hurdles.

FRESH LEAVES are essential to the health and vigor of the worms, and therefore great care must be taken that fermentation has not commenced, when they have been kept on hand sometime, as is necessary in wet weather. Fermentation will be readily observed from the effluvium in the room, and also from the appearance of the leaves, which will exhibit dark-colored spots. When the least appearance of it is discovered, it were better to throw away the whole, than run the risk of injuring the worms. To prevent fermentation, cause the leaves to be well stirred about two or three times a day. Wet leaves, must in no case be given to the worms. They are almost certain to cause disease.

VERMIN, mice, ants, &c., must be guarded against. Mice devour silk worms with wonderful avidity; and the bite of an ant is almost instant death to them. The only way to guard against mice, is to exclude them from the room by some means. Ants may be guarded against by not allowing the hurdles to touch the walls, and by surrounding the legs of the stands with small leaden troughs, filled with water. These are easily formed, and ought not to be neglected when these little pests are troublesome.

THE MOULTING, or changing the skin, takes place generally with the common silkworms, as above stated, and will be observed by the worms ceasing to eat. Generally, all of the same day's hatching moult at the same time; and at these times they do not eat but seem sick. All that is to be done is simply to leave them undisturbed. The food last given them will be left unconsumed, or only partially so. This forms convenient recesses for them to retire to for moulting. They remain in this sickly state from 24 to 36 hours, and their recovery from it will be immediately observed by their activity, and increased size, and considerable change of color. They should be fed immediately with fresh leaves. The first and second change is so imperceptible as to require a close observer to discover them.

Strict attention to cleanliness and ventilation, and undeviating regard to keeping a full supply of fresh leaves on the hurdles, are all that is meant by me when speaking of *care and attention*. If the above rules be completely carried out, the worms will begin to spin in from 25 to 28 days. If the worms are not thus carefully attended to they will begin to spin at any time within 60 days, and then their cocoons will be the less valuable for every day their spinning is protracted beyond 30 days from the time of hatching.

THE AIR of the worms must always be kept pure and sweet. If from any cause whatever, a stench be observed, sprinkle the floor with a solution of chloride of lime, and set cups of it about the room. It is a good plan always to keep a stone jar of it sitting in one corner of the room, and frequently changing it to different places, even when no foul air or disease is present; for it is always better to prevent than to wait to cure diseases. All the diseases I ever discovered in silkworms are readily cured by the free use of chloride of lime or soda. The *tripes* is a disease induced by foul air, and is closely analogous to the plague in the human species. I have known it to destroy a whole laboratory of worms, consisting of about 500,000 in one night; and have myself lost at one time about 100,000. Since, however, I discovered the preventive and curative powers of this most excellent article, I have never lost a worm by any disease. All that is necessary, usually, is to keep the chloride of lime in the room, as above stated, and occasionally sprinkling the floor with a solution of it. A table spoonful, put into a pint of water, is a good quantity to use. If, however, the disease has commenced its ravages, lose no time in removing the hurdles containing the diseased worms, from the room—then take half a pound or so of the chloride put it into a gallon of water, sprinkle the floor well with it; put a spoonful of the chloride in each of several saucers, with a gill of water, and set the saucers about the room, particularly where the disease was first observed. As these diseases always, or at least generally, appear in damp, cloudy or rainy weather, make a brisk blaze in the fire places or stoves. Throw open all the windows and ventilators; and take care that all the filth, if any there be, be removed. In a few hours you will find the disease checked. If there are any dead worms on any of the hurdles, they must be removed forthwith.

Here I must be indulged with an explanation of a circumstance of a rather laughable nature, though it is as much at my own expense, as any body's else. It is in relation to the discovery of the valuable properties of chloride of lime, in preventing and curing disease in silk-worms. It is well known that I have often claimed the *discovery* of this most valuable agent, and that some years ago, a scientific *Frenchman* read a paper before a learned society in Paris, setting forth the important fact of its then recent discovery, and elucidating its great value to the silk-growing interest.—What will the public think of me, and of the Frenchman of science, and especially of the learned society of Paris, when informed, that we are NONE OF US entitled to the credit of discovery; that it is an old remedy—an old agent, used and recommended by Count Dandolo himself, whose writings we all of us had read, whose writings were and had long been familiar as household words to the savans of Paris! Yet, such is the fact, though I never was aware of it until this present writing, when I discovered it while looking over a translation of the writings of Dandolo in the Silk Manual, published by order of Congress, in 1828, in which work it will be found at page 119. The article chloride, it is true, is not mentioned by Dandolo at all, but its elementary principles are described and recommended, for the purifying of noxious air, very distinctly. I had often read the passage, and understood something of chemistry too, but never suspected that the combination of a portion from Dandolo's bottle of common salt and black oxide of maganese, and another of sulphuric acid, would produce chlorine gas. It is true, had I reflected a moment, I should have discovered it; but all of us are in the habit of considering things *themselves*, not the individual materials of which they are made. Hence my oversight, and of course that of the learned men of Paris. For my own part, I ask pardon of Dandolo for the claim I have heretofore set up to his property; but would recommend him to be a little more explicit in future, in his descriptions. But the fumigation of Dandolo, though it be chlorine gas, is not as good as the chloride of lime or of soda; as the gas evolved is not pure, but contains large portions of deleterious gases which are necessarily evolved with the chlorine. Besides, the chlorides of lime and soda are infinitely more convenient, and cheaper.

It seems necessary to recur to the *temperature* of the room, for the purpose of noticing an omission while treating on that head. In very high temperatures, the French recommend sprinkling the room with cold water, for the purpose of cooling it. I have often done injury by doing so, and recommend that it be not resorted to. It of course creates a dampness in the air which is injurious and often dangerous. If the weather be dry, free ventilation is all that is necessary, where proper cleanliness is observed, let the weather be ever so hot. Darkening the room has a good effect in hot weather; and at no time must the sun be allowed to shine upon the worms. A *twilight* is preferred.

The worms will begin to spin cocoons from the 25th to the 35th days from the hatching, depending on the care with which they have been attended to. As before observed, if carelessly attended to, they may not begin before the fortieth or fiftieth day; but generally the thirty-fifth day will be the time of commencement.

The worms will begin to spin cocoons from the 25th to the 35th days from the hatching, depending on the care with which they have been attended to. As before observed, if carelessly attended to, they may not begin before the 40th or 50th day; but generally the 35th day will be the time of commencement.—There readiness to spin will be immediately observed by their transparent, slightly amber color, by their ceasing to eat, and wandering about, leaving fibres of silk on the leaves, and by some of them actually beginning to spin cocoons among the leaves and rubbish on the hurdles, in the corners of the frames, &c. It is then necessary to prepare the *hedges* for them to spin on, or such other contrivance for the purpose as has been determined on.

The hedges for the worms to spin their cocoons on are composed of various materials, and are as various in form. The French and Italians use brush of oak and various other kinds of trees, from which they construct hedges across the hurdles, resembling minature bushes set close together in rows, and pressing against the hurdle alone. The worms climb these hedges, and spin their cocoons among the branches. I always used *broom-corn*, and found it to answer admirably. The seed is carefully to be combed off, the stalk cut off close to the commencement of the straw or brush; the top cut off square, and spread out, pressing against the upper hurdle or paper shelf, and the lower end resting upon the netting of the hurdle. Rooms of these set across the hurdles, six or eight inches apart, and as close together in the row as the tops will admit, answered the purpose with me. Of late, however, cocoon frames, made of laths, have been used, and with success, by many persons. I have never seen them, and am unable to give such a description of them as will enable the reader to construct them. Various other contrivances have been adopted. entirely different from either of the above, and even from each other; and, their authors assert, equally effectual for the purpose. These facts only prove that the silk-worms are not very particular as to where or on what they form their cocoons. They will, indeed, spin them any where; the only object to be attained by particular structures for them to spin on, is the prevention of waste of silk matter in forming the *outlines* of the cocoon. Where there is a space just large enough for the cocoon, very little silk will be wasted in the form of two, or refuse silk. If the space be too large, the worm is compelled to reduce it, by filling it with loose fibres, to the proper dimensions for the cocoon.

As the worms on each hurdle begin to spin, the hedges, or whatever else is to be used, must be supplied; and the attendants should keep an eye upon the worms, to see that they all spin in the proper places. Some will not rise to the hedges or other places prepared for them, but commence spinning on the leaves in the corners of the hurdlrs, &c., they must be taken and placed upon the proper place. Observe that they do not get crowded too close in the hedges or other places, so that they will not each have room for a cocoon; for if they do, they will form *double cocoons*—that is, two or more will join in forming one cocoon, which is good for nothing, except for carding and spinning, as it cannot be reeled.

The worm is four days spinning its cocoon, Consequently they should be left perfectly undisturbed during four entire days after they commence spinning.—On the fifth day after the whole have commenced, the hedges or other support of the cocoons may be taken down, and the cocoons taken off. Select the number of cocoons you may want for the production of eggs for next year, and prepare the others for reeling or for sale. If you can do so, the best way is to reel them at once; if not, the insect must be killed.

Various methods of killing the insect are in use. In France they bake the cocoons in an oven from which the batch of bread has just been drawn, or which has been heated for the purpose to about 150°. If too hot, the silk will be scorched, and thus ruined; if too cool, the insect will not be killed. In Italy they effect the object by exposing the cocoons to the hot sun for several days. Others kill them by filling a vessel containing them with hot steam; others with vapor of spirits. I have lately suggested that they may be effectually killed by the vapor of charcoal—carbonic acid gas—and for this purpose they may be carried into the *hatching-room;* all the doors, and windows, and chimney of which must be perfectly closed. Dispose the cocoons about the room on the net hurdles, one above another, similar to the hurdles in the laboratory. Fill a common portable furnace with charcoal, and set it on fire; place it in the middle of the room, and close the room perfectly. In a short time the room will be completely filled with the deleterious gas, and must of necessity smother the chrysalis in the cocoons. I have heard of this plan having been tried in one instance only; but, in that, it was perfectly successful, and I have no doubt it will always be so. If it is, it is an important improvement, not only in saving much labor and time, as well as expense, in this part of the business, but in saving a great deal of trouble in reeling the cocoons, as it does not harden the gum, as all other processes do, and consequently they are easier to reel. Besides, there is no danger of injury to the silk, which is always more or less depreciated in value by the heat applied in killing the chrysalis. I am at present clearly of the opinion that this process will be universally adopted; but I have only *theory*, and one experiment, for the basis of this opinion. I am not now engaged in the business, and have no opportunity to make the necessary experiments. I would advise that a few cocoons be at first tried, say two or three pounds; that the cocoons thus tried should then be spread out in a warm airy room, for at least two weeks; if none of the *insects* come out, the result will be conclusive. The cocoons are now ready for reeling or for sale.

Eggs for the next year's use are to be obtained, as follows. Spread out the cocoons selected for the purpose on a large table, in any room that can be kept warm and comfortable, and that can be made dark. In about ten days from the time the cocoons were finished, the *moths*, or butterflies, as they are sometimes called, will perforate the cocoons and come out. They will immediately couple, and are then to be taken in pairs, and placed upon the paper suspended for their

accommodation, as described in the following paragraph:

Stretch a small cord across the room, about as high as your head, then two others, two and a half feet apart, and one foot below the first cord, so that the first will be over the centre between the lower ones. Then hang old newspapers over the cords, and pin them to both top and bottom cords. This will form a long range of papers, resembling the roofs of a long row of houses. As the moths couple, place them on these papers; take them by the wings between the thumb and fingers, as they will not be separated by it. You need not trouble them further, as after they separate, the female will commence laying eggs and attaching them to the paper in a small spot about as large as a cent. Put moths enough on each paper to cover the whole sheet with eggs; but not so many as to compel them to lay their eggs on those already there, that is, to pile the eggs on top of each other. This they never do unless from necessity. After they have done laying eggs, the moths generally die in a day or two; the males generally die soon after they separate. The moths do not eat. The recommendation of the French to separate the moths after they have been coupled *six hours*, is perfect nonsense, and is one of the ridiculous refinements that refined people have tried to apply to the silk culture, without the shadow of utility to recommend them, and only remarkable for the great additional labor and perplexity with which they encumber the business. Like all the other fooleries of the French, I tried this, and got for my pains no other result than a loss of about one third of my eggs, which were *not fecundated*, as I might have expected. Let the moths remain together till they separate of themselves, and all your eggs will be good. The room where the cocoons and moths are should be kept nearly dark.

As soon as a sheet is filled with eggs, take it down, roll it up, and put it away in a cellar or an *ice-house*. They should be put in a *tin*, or other metal box, to prevent mice and other vermin from eating them, and should be kept dry, to prevent mould and mildew. If it be desired to keep eggs to a late season the next summer, for the purpose of raising several crops, it is best to put the box of eggs, immediately after they are laid, into an ice-house, and keep them there till wanted. If they are only kept in a cellar till the next spring, and then put into the ice-house, they will hatch in the ice-house very nearly as soon as those exposed for hatching in a warm room. I once had more than a million hatched in this way, in the largest ice-house in Baltimore, the basket containing them sitting in the midst of the blocks of ice, under the straw. I do not even know that putting them in the ice-house immediately after they are laid, will prevent their hatching, but am informed that this has been the effect in several instances where it has been tried. For myself, I have no faith in the double or treble crop theory. I do not believe it will ever be profitably pursued. The natural time of hatching the eggs cannot in my opinion, be either anticipated or postponed with complete success—at least I never was able to do so.

To estimate the number of cocoons you will want for a given number of eggs, all you have to do is to divide the number you want by 150—thus, if you want 100,000 eggs next year, or 2 1-2 ounces, divide 100,000 by 150, and you have 667 as the number of cocoons required. It is true, the moths often lay more than 300 eggs, but you must allow for various circumstances that may diminish the number. I need not remark that it requires *two cocoons*, a male and female to produce the 300 eggs—however, we allow 150 to each.

This essay may not be considered as full and minute in its details as desirable by some; but I believe I have described every thing necessary to the most profitable carrying on of the business. Many particulars contained in books, especially French books, are not noticed at all, for the simple reason, that I deem them useless, and do not wish to occupy the reader's time in useless criticisms. My next number will treat of the *reeling* of cocoons, &c., which will complete the series.

From the Farmers' Cabinet.

NEST-EGGS OF CHALK

If you can't save much, save a little.

Those to whom the charge is committed of collecting the eggs from the hens' nests, are always instructed to let a nest-egg remain, so that the nest may not be deserted. This is very proper, as otherwise the hen would incline to make a new nest at each period of laying; but sometimes an egg that has long performed that office, is taken in mistake, and a fresh one left in its place; no great harm may arise from this, unless it should have become rotten, and in that case, when the cook gets hold of it, to say the least of it, it gives rise to unpleasant feelings, and sometimes charges of fraud. The nest-egg is always lost, either by being spoiled, or frozen in winter; and when eggs sell for three cents each, which has been the price for some weeks past, it is not worth while to throw away even a small sum, when by a very simple process it can easily be saved, by cutting pieces of chalk, or any other white substance, into a tolerable resemblance of an egg, and putting it into the nest, where it will answer all the purposes of a nest-egg, full as well as a real egg; the hen not being found to scrutinize sufficiently to detect the false token. A number of these should be procured, sufficient to supply one to each nest, where they may remain for years, without danger of being sucked by dogs or rats, and the hardest frosts will never injure them; and there will be no danger of selling them in the market for good fresh eggs laid last week.

OVA.

PLANTATIONS ON THE HOUSE TOP.—In Sweden it is not a rare occurrence to find in the country, and even in small towns, houses built so low, that the roof, covered with grass, serves as pasture ground for a goat. In Norway, trees planted in the turf which covers the cottages; so that a village, when seen from a distance, bears no slight resemblance to a grove.—Nothing is more common than to see kitchen herbs cultivated on the roofs of houses in these countries.

DAVY'S AGRICULTURAL CHEMISTRY

We are glad to see a reprint of the above work, in this country, under circumstances too which will secure it an extensive circulation. The entire work, copied from the last London edition, with notes by Dr. John Davy, has been incorporated with the regular matter of the Farmer's Register, filling nearly two numbers that journal; and its editor advertises an extra edition besides, at $—. No intelligent farmer should be without this standard work.

We give below the concluding passages of the introductory lecture, as a fair specimen of the author's style, and also as illustrative of the importance of this study to the practical agriculturalist.

ED. TEN. FARMER.

"It is no unusual occurence for persons who argue in favor of practice and experience, to condemn generally all attempts to improve agriculture by philosophical inquiries and chemical methods. That much vague speculation may be found in the works of those who have lightly taken up agriculture chemistry, it is impossible to deny. It is not uncommon to find a number of changes rung upon a string of techincal terms, such as oxygen, hydrogen, carbon, and azote, as if the science pended upon words rather than upon things. But this is, in fact, an argument for the necessity of the establishment of just principles of chemistry on the subject. Whoever reasons upon agriculture is obliged to recur to this science He feels that it is scarcely possible to advance a step without it; and if he is satisfied with insufficient views, it is not because he prefers them to accurate knowledge, but generally because they are more current. If a person journeying in the night wishes to avoid being led astray by the ignis fatuus, the most secure method is to carry a lamp in his own hand.

"It has been said, and undoubtedly with great truth, that a philosophical chemist would most probably make a very unprofitable business of farming; and this certainly would be the case, if he were a mere philosophical chemist; and unless he had served his apprenticeship to the practice of the art as well as to the theory. But there is reason to believe that he would be a more successful agriculturist than a person equally unitated in farming, but ignorant of chemistry altogether; his science, as far as it went, would be useful to him. But chemistry is not the only kind of knowledge required; it forms a small part of the philosophical basi of agriculture; but it is an important part, and, whenever applied in a proper manner, must produce advantages.

"In proportion as science advances, all the principles become less complicated, and consequently more useful. And it is then that their application is most advantageously made to the arts. The common laborer can never be enlightened by the general doctrines of philosophy, but he will not refuse to adopt any practice, of the utility of which he is fully convinced, because it has been founded upon these principles. The mariner can trust to the compass, though he may be wholly unacquainted with the discoveries of Gilbert on magnetism, or the refined principles of that science developed by the genius of Æpinus. The dyer will use his bleaching liquor, even though he is perhaps ignorant not only of the constitution, but even of the name of the substance on which its powers depend. The great purpose of chemical investigation in agriculture ought undoubtedly to be, the discovery of improved methods of cultivation. But to this end scientific principles and practical knowledge are alike necessary. The germs of discovery are often found in rational speculations; and industry is neve so efficacious as when assisted by science.

"It is from the higher classes of the community, from the proprietors of land; those who are fitted, by their education, to form enlightened plans, and by their fortunes, to carry such plans into execution: it is from these that the principles of improvement must flow to the laboring classes of the community; and in all cases the benefit is mutual; for the interest of the tenantry must be always likewise the interest of the proprietors of the soil. The attention of the laborer will be more minute, and he will exert himself more for improvement, when he is certain he cannot deceive his employer, and has a conviction of the extent of his knowledge. Ignorance in the possessor of an estate, of the manner in which it ought to be treated, generally leads either to inattention, or injudicious practices in the tenant or the bailiff "*Agrum pessimum mulctari cujus Dominus non docet sed audit villicum.*"

"There is no idea more unfounded than that a great devotion, of time, and a minute knowledge of general chemistry, is necessary for pursuing experiments on the nature of soils, or the properties of manures. Nothing can be more easy than to discover whether a soil effervesces, or changes color by the action of an acid, or whether it burns when heated, or what weight it loses by heat; and yet these simple indications may be of great importance in a system of cultivation. The expense connected with chemical inquiries is extremely trifling; a small closet is sufficient for containing all the materials required. The most important experiments may be made by means of a small portable apparatus; a few phials, containing acids, alkalies, and chemical re-agents; some foil and wire of platinum; a lamp, a crucible, some fialtrating paper, some funnels and glasses, for receiving products, are all that can be considered as absolutely essential for purs ing useful researches.

"It undoubtedly happens in agricultural chemical experiments conducted after the most refined theoretical views, that there are many instances of failure for one of success; and this is inevitable from the capricious and uncertain nature of the causes that operate, and from the impossibility of calculating on all the circumstances that may interfere: but this is far from proving the inutility of such trials; one happy result, which can generally improve the methods of cultivation, is worth the labor of a whole life, and an unsuccessful experiment, well observed, must establish some truth, or tend to remove some prejudice.

Even considered merely as a philosophical science, this department of knowledge is highly worthy of

cultivation. For what can be more delightful than to trace the forms of living beings and their adaptations and peculiar purposes; to examine the progress of inorganic matter in its different processes of change, till it attain its ultimate and highest destination,—its subserviency to the purpose of man?

"Many of the sciences are ardently pursued, and considered as proper objects of study for all refined minds, merely on account of the intellectual pleasure they afford; merely because they enlarge our views of nature, and enable us to think more correctly with respect to the beings and objects surrounding us. How much more, then, is this department of inquiry worthy of attention, in which the pleasure resulting from the love of truth and of knowledge is as great as in any other branch of philosophy, and in which it is likewise connected with much greater practical benefits and advantages? *"Nihil est melius, nihil uberius, nihil homine libero dignius."*

"Discoveries made in the cultivation of the earth are not merely for the time and country in which they are developed, but they may be considered as extending to future ages, and as ultimately tending to benefit the whole human race; as affording subsistence for generations yet to come; as multiplying life, and not only multiplying life, but likewise providing for its enjoyment.

From the Maine Farmer.

PIGS AND PIGGERIES.

The improvements which are annually taking place in Agriculture, are seen and felt as much in the attention that is now paid to the rearing and fattening of good farm stock, as in any thing.

We are pleased to see that the Hog comes in for a share of this attention, and there seems to be at this moment a particular enquiry throughout the whole Union, what breed is the best, and how can they be kept and most profitable managed?

The increased culture of roots, enable those who raise large quantities of them to multiply the tenants of the stye inasmuch as they are enabled to feed them and keep them in a healthy growing state at a cheaper rate in many regions, by feeding them with these than they can by grain. The hog seems to be a sort of *omniverous* animal, that is like his friend, protector, murderer and devourer, man, he can eat almost any thing; but the food which appears to be most congenial to him, is roots, nuts and seeds, or grain.

That roots were designed to enter largely into his diet, is plainly indicated by the formation of his *snout* and his habits of using it. Give him a chance and he will soon demonstrate to you that he not only knows where to find them, but how to dispose of them.

They are not so well calculated to fatten him as they are to give him health and strength—to keep him alive and active; but they are a very useful ingredient in the fattening process, and when combined with grain, may enter largely into his diet while preparing him for slaughter.

Fruits also, are very grateful to his palate, and apples are now coming very generally into use, as an article of food for the swine of the farm. Cooking his food, whatever it may be, has been found by experience to be a great improvement. Hence any one who may be desirous of rearing and fattening pork to the best advantage, should prepare a piggery or building, devoted exclusively to this business. The style and fashion need not be very splendid, though every one may consult his own taste and means, in regard to it. Three requisites, however should be attended to, viz: It should be convenient—it should be warm—it should be warm and dry. The size should be according to the number that you wish to keep. As a general rule in building or enclosing, a circle will take the least stuff, and a square the next less quantity and a parallellogram more than either. For instance, a circle twenty feet in diameter, will require nearly sixty-three feet of fence or boards to enclose it. A square twenty feet each way, will require eighty feet, this will contain a little more area than the circle; but a parallellogram which shall contain as much area as the square (400 feet) say forty feet long and ten feet wide, will require one hundred feet to enclose it.

A circle is somewhat difficult to construct, but a square is very easy. Suppose you erect a building twenty feet square and have your pens on the out side three of the sides will give you space enough to accommodate and feed thirty swine. You can have your wood, steamers, boilers and vats, in the twenty feet room and feed them all without going out of the room by having a lid or trap door to lift up and give you a chance to the troughs. If you can have it placed on the side of a hill where water can be obtained easily, and have a cellar dug into the hill, the floor of which shall be on a level with the floor of your boiling room, it will be very convenient, but if not, a cellar below may be made in the usual manner and a granery in the chamber above.

Some years ago there was a communication published in the American Farmer, from Mr. Ingerson of Roxbury, and subsequently in the Farmer and Gardner, respecting the management of a piggery, which gives the most systematic and methodical manner of managing swine that we have anywhere seen, and we shall publish it soon for the benefit of some of our readers, who we know are seeking information on this subject.

From the Farmers' Cabinet.

ORCHARD GRASS.—"This grass is worthy of being cultivated on account of its uncommon luxuriance.—Horses, cows, and sheep, eat it readily, and it is valuable on account of its excellent after-feed. It affords an abundant crop, springs early, and grows fast, makes excellent hay, and yields abundance of seed, which is not easily shaken out. It is a hardy grass, found highly useful in moist loamy soils, and thriving under the shade of trees. It comes early, is soon mature, and continues green until late in the season, as clover does. If intended for fodder, it should be cut while young and tender.

MORAL MAXIM.—"If I wanted to punish an enemy, it should be by fastening on him the trouble of constantly hating somebody."—*Hannah More.*

JONESBOROUGH, FEBRUARY, 1839.

NOTICES.

We have received the first number of the "Southern Cultivator and Journal of Science and Improvement" a new agricultural work to be published semi-monthly, at Columbia in this State by David Clayton at $2 per annum. It is a very large and handsomely printed sheet; and exhibits in its editorship decided spirit and ability. Could the conductors be induced to soften down a little the *sporting* feature which is *rather* too prominent in the present number, we should have no fears whatever of its eminent usefulness and respectability. We are free to confess that we have never been able to perceive any connexion, but a most unnatural and disastrous one, between the sports of the turf and the legitimate interests of agriculture; and we should be very sincerely gratified if our friends at Columbia could be prevailed on to act upon a like opinion in the management of their highly promising work, the "Southern *Cultivator* and Journal of *Science* and *Improvement*."

The Farmers' Register Petersburg Va., so well and advantageously known as to need no commendation from us, commenced its seventh volume, on the 31st ult., greatly reduced in price. Its regular terms have hitherto been $5. Two subscribers, now, uniting to remit a par payment, in advance or at the time of subscribing, without cost to the publisher, may receive the work at $2 50cts each. In other words a $5 bill will purchase two copies; but to a single subscriber the terms are still $5. This distinction is adopted from the avowed motive (not a sordid one) of extending the circulation of the work, which, aside from the intrinsic value of its contents, is now offered at a rate so cheap as to make it a bargain even when the *quantity* of its matter only is considered.

What has become of our correspondents? We hope they will not forget to lend us their highly valued aid in sustaining the interest of this work. We earnestly solicit communications from every section of country where the Farmer circulates.

From the Farmer's Cabinet.

CASH BOOK.

A little care prevents much cost and trouble.

It is a very easy and simple affair to keep a cash book, and yet how very few farmers do it. Any person who can write can keep a book of this description, and many advantages accrue from it. On one page of your cash book set down every thing sold, and the sum received for it.—On the other side put down all your outgoings or expenditures; and when it is begun, the amount of cash on hand is put at the top of the column of receipts, at any time by adding up the two pages, and taking the difference of them will show the balance of cash you have in hand; and if there is any disagreement, there must be some error of entry, or there must be "a hole in the purse."—A book of this kind accurately kept, would show at the end of the year, or at any other time, the amount of wheat, corn, potatoes, butter, poultry, eggs, or any other articles sold, and the sum received for them. It would do more, it would show all your outlayings for stock, seeds, implements of husbandry, repairs, clothing, tea, coffee, sugar, salt, &c., and also for wages, and would present a very curious and interesting document for family examination at the end of a twelvemonth; and if there should be found to be "a hole in the purse," it would indicate the spot where repairs were most necessary.

A farmer keeping a book of entries of this description, would always know his latitude and longitude, as a captain of a ship does when on the ocean, and would be less likely to run on to shoals, or get among the *breakers*. As it is not very usual among farmers to take receipts when money is paid on ordinary occasions, and not in very large sums, and as the memories of many people are very frail, such a book of entries as has been referred to, would be of essential service as a record of payment when no other evidence of it existed, and might prevent litigation and trouble in case of the decease of one or both of the parties. On the death of the head of a family who has kept no regular records of his receipts and payments, much difficulty and sometimes heavy losses have occurred, besides a great deal of trouble and anxiety to those who were obliged to grope in the dark in settling his estate.

It is well known that very many worthy intelligent farmers are careful to preserve an accurate statement of all their worldly concerns, duly arranged in proper form, and such rarely find "a hole in the purse."

But there are many others who would at once plead guilty, or, if they did not, could readily be convicted on responsible testimony, of totally neglecting to keep any intelligible series of entries in a book, of their ingoings and outgoings, and these are the persons who often complain of "a hole in the purse," and yet they are not careful to have it repaired in due season.

ABRAHAM.

List of payments since the issuance of the January Number, 1839.

Wm. Bowman, 4 50; W. Kincaide, 4 50; I. Rogers, 3; Col. R. Deaver, 3; R. Howorth, 1, D. C. Johnson, 1; J. Gunn, 1.